7.5, 6.8, 5.9, 5.2, 4.4, 3.8, 3.2, 2.7, 2.2, 1.8, 1.5, 1.2, 1.0, and 0.8 weight percent respectively.

5. A method of making a hydrocarbon composition comprising C5 to C20 hydrocarbons wherein the amounts (by weight) of hydrocarbons decrease in the order C5>C6>C7>C8>C9>C10>C11>C12>C13>C14>C15>C16>C17>C18>C19>C20; wherein C5, C6, C7, and C8 are each present in at least 5 wt %; and wherein C20 is present in the range of 0.3 to 2.0 wt %; comprising reacting CO and H_2 in a reactor for Fischer-Tropsch synthesis, comprising: a microchannel; and a catalytically active surface layer disposed over at least a portion of the surface of the microchannel; wherein the catalytically active surface layer comprises a Fischer-Tropsch catalytic metal and wherein the thickness of the catalytically active surface layer is less than 35 μm.

6. The hydrocarbon composition of claim **1** wherein said hydrocarbon composition is obtained from a Fischer-Tropsch reaction without additional refining steps.

7. The hydrocarbon composition of claim **1** further comprising a trace amount (0.1 ppb to 10 ppm) of at least one element selected from the group consisting of Co, Ni, Ru, and Re.

8. The method of claim **5** wherein the thickness of the catalytically active surface layer is less than 20 μm.

9. The method of claim **5** wherein wherein methane selectivity is 10% or less.

10. The method of claim **5** wherein the microchannel comprises a contiguous bulk flow path having an open dimension of at least 0.1 mm.

11. The method of claim **10** further comprising transferring heat from the microchannel to an adjacent microchannel that contains a heat exchange fluid.

12. The hydrocarbon composition of claim **1** wherein the composition is made by a Fischer-Tropsch synthesis having a CO conversion of at least 49%.

13. The hydrocarbon composition of claim **1** wherein the composition is made by a Fischer-Tropsch synthesis having a CO conversion in the range of 49% to 75%.

14. The hydrocarbon composition of claim **1** wherein the composition is made by a Fischer-Tropsch synthesis having a methane selectivity of 10% or less.

15. A hydrocarbon composition, comprising: C5 to C20 hydrocarbons wherein the amounts (by weight) of hydrocarbons decrease in the order C5>C6>C7>C8>C9>C10>C11>C12>C13>C14>C15>C16>C17>C18>C19>C20; wherein C5, C6, C7, and C8 are each present in at least 5 wt %; and wherein C20 is present in the range of 0.3 to 2.0 wt %; and wherein the weight percents of C5 to C20 hydrocarbons are 8.0-10.0, 7.5-9.5, 6.5-8.5, 5.8-7.8, 4.9-6.9, 4.2-6.2, 3.4-5.4, 2.8-4.8, 2.2-4.2, 1.7-3.7, 1.2-3.2, 0.8-2.8, 0.5-2.5 0.2-2.2, 0.4-2.0, and 0.3-1.8 weight percent respectively.

16. The hydrocarbon composition of claim **15**, wherein the weight percents of C5 to C20 hydrocarbons are 8.5-9.5, 8.0-9.0, 7.0-8.0, 6.3-7.3, 5.4-6.4, 4.7-5.7, 3.9-4.9, 3.3-4.3, 2.7-3.7, 2.2-3.2, 1.7-2.7, 1.3-2.3, 1.0-2.0 0.7-1.7, 0.5-1.5, and 0.3-1.3 weight percent respectively.

17. The hydrocarbon composition of claim **15** further comprising a trace amount (0.1 ppb to 10 ppm) of at least one element selected from the group consisting of Co, Ni, Ru, and Re.

18. A method of making a hydrocarbon composition, comprising: reacting CO and H_2 in a reactor for Fischer-Tropsch synthesis to form the hydrocarbon composition comprising: C5 to C20 hydrocarbons wherein the amounts (by weight) of hydrocarbons decrease in the order C5>C6>C7>C8>C9>C10>C11>C12>C13>C14>C15>C16>C17>C18>C19>C20; wherein C5, C6, C7, and C8 are each present in at least 5 wt %; and wherein C20 is present in the range of 0.3 to 2.0 wt %; and further wherein the weight percents of C5 to C20 hydrocarbons are 8.5-9.5, 8.0-9.0, 7.0-8.0, 6.3-7.3, 5.4-6.4, 4.7-5.7, 3.9-4.9, 3.3-4.3, 2.7-3.7, 2.2-3.2, 1.7-2.7, 1.3-2.3, 1.0-2.0 0.7-1.7, 0.5-1.5, and 0.3-1.3 weight percent respectively.

19. The method of claim **18** wherein methane selectivity is 10% or less.

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